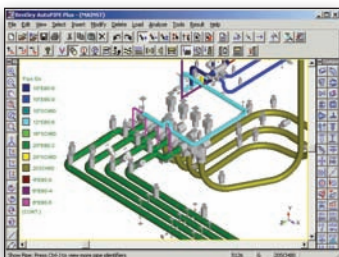




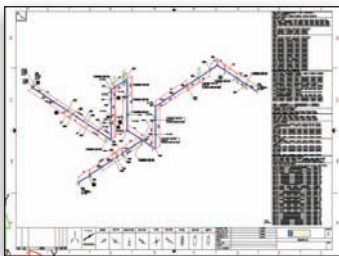
Bentley® AutoPIPE® V8i

The Most Productive Tool for Pipe Stress Analysis

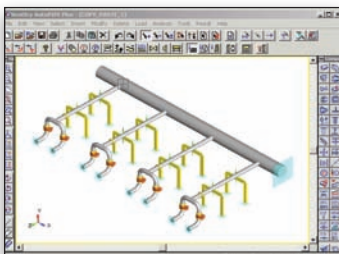
Bentley AutoPIPE V8i is an advanced design and analysis program for calculating piping code stresses, loads, and deflections under static and dynamic load conditions, even to the highest nuclear standards. AutoPIPE V8i analyzes systems of any complexity, with special features for buried pipeline analysis, wave loading, water or steam hammer, FRP/GRP pipe and built-in pipe/structure interaction.



Color-coded pipe properties allow users to quickly identify and investigate critical areas.



Automatic fully dimensioned stress isometric generation.



AutoPIPE features graphic selection of piping and structural model to cut, copy, or paste.

Unique, Object-Based Graphical User Interface

The OpenGL CAD graphical user interface found in Bentley AutoPIPE V8i enables users to easily create and modify the pipe stress model. Users can simply point and click on the graphical model to insert, modify, or delete pipe supports, loads, or components. After each operation, the model display is automatically updated for instant visual feedback. Using AutoPIPE V8i graphical select options, users can insert, delete, or modify components, supports, pipe properties, temperatures/pressures, or other parameters across an entire range of points with one command. Graphical selection of ranges is also used to cut, copy, and paste operations. Users can check, sort, or make changes to the input data quickly using interactive grid spreadsheets. AutoPIPE V8i features up to 99 undo or redo steps to correct mistakes, perform 'What-if' analysis, or to iterate quickly through design scenarios.

Advanced Analysis Features for Varied Piping Environments

AutoPIPE V8i provides unique capabilities for process, power, oil and gas, nuclear, underground, offshore floating, production, storage, and offloading (FPSO) platform and subsea pipeline areas with 25 international piping codes. Advanced AutoPIPE V8i capabilities include built-in wave loading, buried pipeline analysis, jacketed piping, dynamic loadings, and orthotropic fiberglass reinforced plastic (FRP) or glass reinforced plastic (GRP) piping analysis. It also includes thermal stratification or bowing, thermal transient, pipe/structure interaction, fluid transient with closure time and relief valve utilities, advanced load sequencing, non-linear support gaps and friction and jacketed piping. Local stress calculation to WRC 107, WRC 297, PD 5500, KHK, API 650 is available using WinNOZL.

Graphical Review of Analysis Results

Once a system is analyzed, users can click on the graphical model and instantly view stresses, deflections, forces, and moments. Color-coded results and pop-up windows enable

users to quickly identify and investigate critical areas without having to review a voluminous amount of batch output data. Up to 500 load combinations can be viewed with the powerful on-screen results grid, which provides interactive filtering, sorting, and printing of maximum result values.

Interface with ProjectWise, CAE, STAAD.Pro and Plant Design CAD Systems

The only solution on the market today with tight integration between piping and structural analysis, AutoPIPE V8i can automatically transfer pipe support loads as well as import complete structures to and from STAAD.Pro V8i, the number 1 structural program, saving weeks of design time and providing safer, more-realistic engineered designs. Import 3D plant design CAD models from AutoPLANT® V8i, PlantSpace® V8i or OpenPlant® V8i, Intergraph PDS®, SmartPlant® or CADWORX®, SolidWorks®, Inventor®, CATIA®, AVEVA PDMS®, into AutoPIPE V8i to save hundreds of man-hours and ensure accurate pipe stress models.

AutoPIPE V8i provides users with full read/write interoperability with Caesar II, and can use Navigator to view any AutoPIPE V8i model and its data alongside any CAD model to make early engineering decisions, perform clash detection, and reduce design iterations. Stress isometric with fully dimensioned plot and custom data to display the pipe stress engineer's changes. AutoPIPE V8i provides comprehensive ProjectWise integration for global collaboration of engineering and CAD data files on major projects.

Quality Assurance

AutoPIPE V8i rigorous quality assurance program has passed numerous nuclear and Nuclear Procurement Issues Committee (NUPIC) audits to 10CFR50 App. B, ISO9001, CSA N286.7-99, ASME NQA-1, and ANSI N45.2 standards, making Bentley AutoPIPE V8i one of the few pipe stress programs with a high-level of quality. AutoPIPE Nuclear V8i provides design of critical safety pipework to ASME Class 1, 2, or 3.

System Requirements

Processor:

Pentium® III or higher

Operating System:

Vista Business or XP or Windows 7 Professional

Memory:

256MB RAM

Hard Disk:

174MB (200MB recommended)

Find out about Bentley at: www.bentley.com

Contact Bentley

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Outside the US +1 610-458-5000

Global Office Listings

www.bentley.com/contact

Bentley AutoPIPE V8i At-A-Glance

Modeling

- Single line, wire-frame and solid render drawing modes
- CAD style single, double or quad view ports
- Switch vertical axis (Y or Z) on the fly
- On-screen Distance Calculator to check coordinate accuracy and clearances
- Built-in Valve Actuator for more accurate valve modeling
- Segment management: reverse, split, join and re-order segments
- CAD line numbers
- Connectivity checker to avoid model disconnects
- English, Metric, SI, and user-defined units
- Extensive ANSI/ASME, DIN, JIS, GD, GB and GRP/FRP standard piping component and material libraries
- Structural steel modeling using 17 countries of structural steel libraries with nonlinear pipe/structure interaction
- Expansion joint modeling with tie rod assemblies
- Import model from AutoPLANT® V8i, PlantSpace® V8i, OpenPlant® V8i, Intergraph PDS® or SmartPlant®, Aveva PDMS®, CADWORX®, SolidWorks®, Inventor®, CATIA®, or PlantFLOW
- PIPELINK bi-directional integration with STAAD.Pro V8i
- Automatic Stress Isometric generation DXF, DWG or DGN with engineers mark-ups
- Export model geometry data into AutoPLANT® V8i, AutoCAD® and MicroStation® V8i

Dynamic Analysis

- Time history dynamic analysis with ground motion
- Mode shapes, accelerations and natural frequencies
- Harmonic load analysis
- Response spectrum and shock spectra
- Multiple spectrum enveloping
- NRC spectra and code case N411 (PVRC) damping and spectra
- NUREG.CR-1677, CR-6414 & CR-6049 benchmarks
- Automatic mass discretization
- Missing mass and ZPA correction

Piping Codes

- ASME B31.1 (1967,1992, 2004, 2005, 2007), B31.3, B31.4, B31.8
- ASME Sec. 3, Class I, II & III (1972 to 2004)
- European Standard Metallic Industrial Piping EN13480
- B31.4, B31.8, B31.4 Offshore, B31.8 Offshore & CSA_Z662 Offshore codes
- Canadian CAN/CSA-Z662
- British Standard BS 806, BS 7159 (GRP piping code)
- Swedish Piping Code (SPC) Method 2
- Norwegian Det Norske Veritas (DNV) and TBK 5-6
- Dutch Stoomwezen D1101
- Japanese KHK, MITI class 3, JSME NC1-PPC and General Fire Protection code
- French RCC-M and SNCT

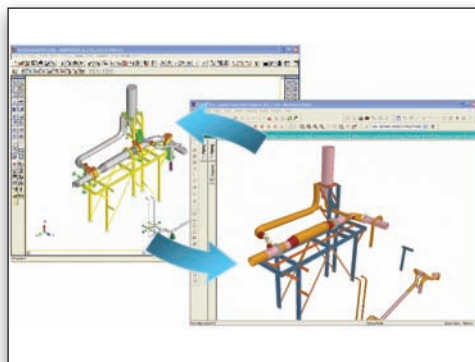
Analysis

- Calculate up to 100 thermal, 10 seismic & wind and 10 each of dynamic load cases.

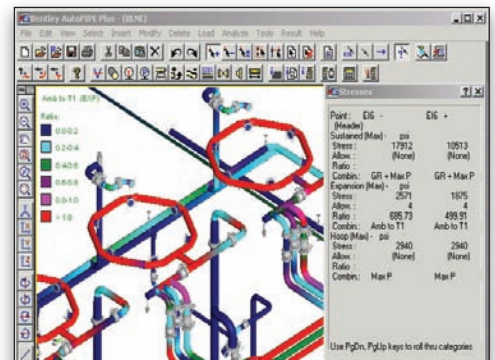
- Unlimited static analysis to examine different loading scenarios including hot modulus
- Automatic generation of wind profiles per ASCE and UBC guidelines
- Wave loading and buoyancy for offshore applications
- Hydrotest analysis with locking spring hangers
- Fluid transient utilities for water and steam hammer plus relief valve load analysis
- Automatic spring hanger sizing from 21 manufacturers
- State-of-the-art nonlinear support gap, friction and soil interaction
- Thermal stratification analysis
- Thermal transient analysis (TTA), Fatigue & High Energy / Leakage design for ASME Class 1
- Ec/Eh ratio applied to expansion stresses for any piping code
- Integrated flange loading analysis per ANSI B16.5
- Nozzle flexibility analysis per API 650 App. P, ASME class 1, WRC 297 and Biljaard methods

Results

- Results saved to Microsoft Access MDB file for post-processing
- Automatic or user-defined load combinations grid
- Automated Batch processing
- Maximum intermediate stresses
- Reference point for manufacturer equipment loading reports
- Rotating equipment to API 610, NEMA and API617, and user-defined
- Filtering and sorting of results by stress, deflection or load criteria



Bi-directional integration with number 1 Structural program STAAD pro V8i



Users can click on the graphical model to instantly view stresses.